

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | |
|--|------|------|---|---|-------------------|---|-------------|--------------|---|--|--|
| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div> | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | |
| Doc/Data <input type="checkbox"/> | | | | | | | | | | | |
| Equip/Tooling <input type="checkbox"/> | | | | | | | | | | | |
| Operator <input type="checkbox"/> | | | | | | | | | | | |
| Material <input type="checkbox"/> | | | | | | | | | | | |
| Setup <input type="checkbox"/> | | | | | | | | | | | |
| Other <input type="checkbox"/> | | | | | | | | | | | |
| Process <input type="checkbox"/> | | | | | | | | | | | |
| Supplier <input type="checkbox"/> | | | | | | | | | | | |
| Training <input type="checkbox"/> | | | | | | | | | | | |
| Unapproved <input type="checkbox"/> | | | | | | | | | | | |
| FAULT CATEGORY | | | | | | | | | | | |
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | | | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio | | | <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions | | | <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other | | |

Work Order ID 87648

87648

Page 2

July-23-12 3:16:18 PM

Item ID: D3622-1

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Ball Stud

Start Date: 7/10/12 Start Qty: 30.00

30

Cust Item ID:

Required Date: 8/10/12 Req'd Qty: 30.00

30

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 130 | Identify as per dwg & Stock Location: <u>060</u> | 0.00 | | | | | | | |
| *130* | | | | | | | | | |
| Packaging | Memo | 0.00 | | | | 31 | 82 | 12/9/24 | |
| Packaging | | | | | | | | | |
| 140 | QC21- Final Inspection - Work Order Release | 0.00 | | | | | | | |
| *140* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |

12/9/24 *[Signature]*

ME
12-09-24

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | | | | | | | | |
|--|---|---|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____ Part No. _____ NCR No. _____ | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | |
| Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | | | | | | | | | | | | | | | |
| Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | | | | | | | | | | | | | | | |
| Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | | | | | | | | | | | | | | | |
| Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | | | | | | | | | | | | | | | | |

| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Doc/Data | | | | | | | | | |
| Equip/Tooling | | | | | | | | | |
| Operator | | | | | | | | | |
| Material | | | | | | | | | |
| Setup | | | | | | | | | |
| Other | | | | | | | | | |
| Process | | | | | | | | | |
| Supplier | | | | | | | | | |
| Training | | | | | | | | | |
| Unapproved | | | | | | | | | |

FAULT CATEGORY

| Landing Gear | General | Other |
|---|---|--|
| <input type="checkbox"/> Bending | <input type="checkbox"/> Bend | <input type="checkbox"/> Grain |
| <input type="checkbox"/> Centre Not Concentric to O/S | <input type="checkbox"/> BOM/Route | <input type="checkbox"/> Hardware |
| <input type="checkbox"/> Cracks | <input type="checkbox"/> Broken/Damaged | <input type="checkbox"/> Inspection Incomplete |
| <input type="checkbox"/> Crushed/Crimped | <input type="checkbox"/> Burrs | <input type="checkbox"/> Instructions Incomplete/Unclear |
| <input type="checkbox"/> Cuffs | <input type="checkbox"/> Contamination | <input type="checkbox"/> Maintenance |
| <input type="checkbox"/> Heat Treat | <input type="checkbox"/> Countersink | <input type="checkbox"/> Mislabeled |
| <input type="checkbox"/> Inspection Strip in Tube | <input type="checkbox"/> Cut Too Short | <input type="checkbox"/> Misread |
| <input type="checkbox"/> Ripples in Bend | <input type="checkbox"/> Drill Holes | <input type="checkbox"/> Offset |
| <input type="checkbox"/> Torque Waves in Extrusion | <input type="checkbox"/> Drawing | <input type="checkbox"/> Out of Calibration |
| <input type="checkbox"/> Turning Sequence | <input type="checkbox"/> Finish | <input type="checkbox"/> Out of Sequence |
| <input type="checkbox"/> Wave/Twist in Tube | <input type="checkbox"/> Folio | <input type="checkbox"/> Outside Dimensions |
| | | <input type="checkbox"/> Ovalized |
| | | <input type="checkbox"/> Over/Under tolerance |
| | | <input type="checkbox"/> Part Incorrect |
| | | <input type="checkbox"/> Part Lost/Missing |
| | | <input type="checkbox"/> Part Moved |
| | | <input type="checkbox"/> Positioned Wrong |
| | | <input type="checkbox"/> Power Loss/Surge |
| | | <input type="checkbox"/> Pressure/Forced |
| | | <input type="checkbox"/> Temperature/Cure |
| | | <input type="checkbox"/> Weld |
| | | <input type="checkbox"/> Wrong Stock Pulled |
| | | <input type="checkbox"/> Other |

Picklist Print

July-23-12 3:16:17 PM

Page 1

Work Order ID: 87648

Parent Item: D3622-1

Parent Item Name: Ball Stud

Start Date: 7/10/12

Required Date: 8/10/12

Start Qty: 30.00

Required Qty: 30.00

Comments: IPP Rev:A New Issue 07-04-24 JLM

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Perch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|

| | | | | | | | | | | | | | |
|------------------|--|-----------|----|--|--|-----|---|---------|-------|----------|--|------------|--|
| M303H0.500 | | Purchased | No | | | 100 | f | 30.4280 | 0.108 | 3.410526 | | | |
| 303 HEX BAR .500 | | | | | | | | | | 3.908 | | 8/12/09/22 | |

Location

Loc Qty

Loc Code

MAT037

30.428

109778

14.328

121282

12

121380

4.1

B

3.908

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

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| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | | |
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| Equip/Tooling <input type="checkbox"/> | | | | | | | | | | | | |
| Operator <input type="checkbox"/> | | | | | | | | | | | | |
| Material <input type="checkbox"/> | | | | | | | | | | | | |
| Setup <input type="checkbox"/> | | | | | | | | | | | | |
| Other <input type="checkbox"/> | | | | | | | | | | | | |
| Process <input type="checkbox"/> | | | | | | | | | | | | |
| Supplier <input type="checkbox"/> | | | | | | | | | | | | |
| Training <input type="checkbox"/> | | | | | | | | | | | | |
| Unapproved <input type="checkbox"/> | | | | | | | | | | | | |
| FAULT CATEGORY | | | | | | | | | | | | |
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | | | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio | | | <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions | | | <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge | | <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other | |

| | | | |
|--|--|---------------------|---------|
| DART AEROSPACE LTD | | Work Order: | 87648 |
| Description: Ball Stud | | Part Number: | D3622-1 |
| Inspection Dwg: D3622 Rev: C | | Page 1 of 1 | |

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

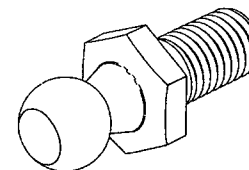
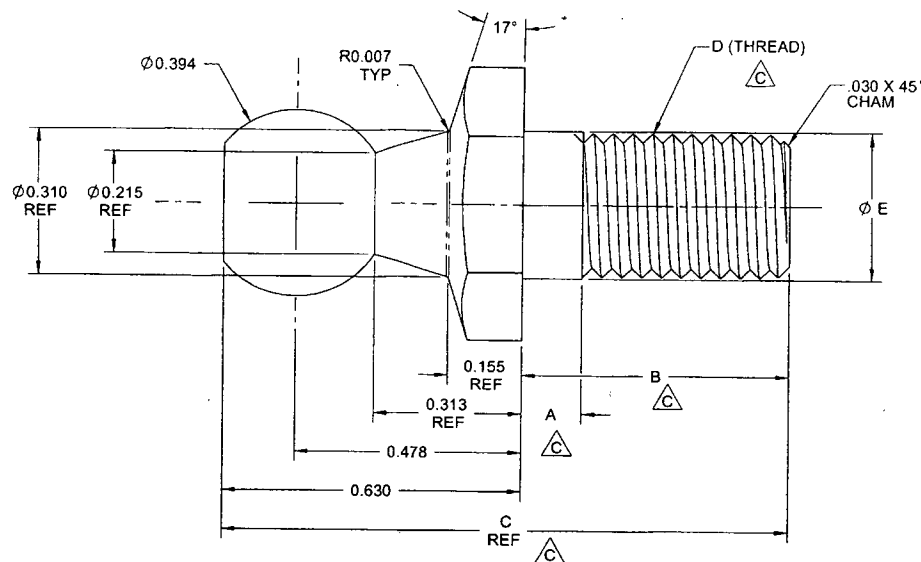
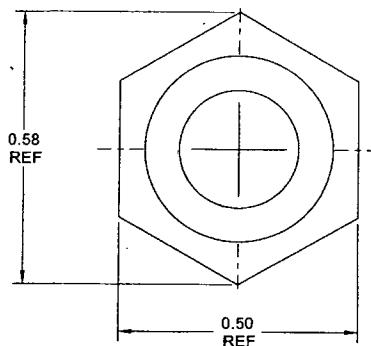
| Drawing Dimension | Tolerance | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|-------------------|------------------------------|------------------|--------|--------|----------------------|----------|
| 0.58 | +/-0.030 | .580 | ✓ | | SLO8 | VERN |
| 0.50 | +/-0.030 | .500 | ✓ | | | |
| Ø0.394 | +/-0.010 | .399 | ✓ | | | |
| Ø0.310 | +/-0.010 | .310 | ✓ | | | |
| Ø0.215 | +/-0.010 | .215 | ✓ | | | |
| 0.155 | +/-0.010 | .151 | ✓ | | | |
| 0.313 | +/-0.010 | .315 | ✓ | | | |
| 0.478 | +/-0.010 | .478 | ✓ | | | |
| 0.630 | +/-0.010 | .632 | ✓ | | | |
| 0.125 | +/-0.010 | .1285 | ✓ | | | |
| 0.563 | +/-0.010 | .563 | ✓ | | | |
| 1.19 | +/-0.030 | 1.190 | ✓ | | | |
| 0.3125-24UNF-3A | +0.001/-0.002 | .312-24-3A | ✓ | | Thread gauge | |
| M.O.W. | Min = 0.3336 Max = 0.3363 | .334 | ✓ | | SLO2 | Mic |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| | |
|---------------------|-----------|
| Measured by: | <i>SS</i> |
| Date: | 12/09/22 |

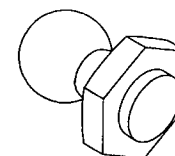
| | |
|--------------------|----------|
| Audited by: | B.A |
| Date: | 12/09/22 |

| | |
|------------------------------|--|
| Preliminary Approval: | |
| Date: | |

| Rev | Date | Change | Revised by | Approved |
|-----|----------|----------------------------------|-----------------------|--------------------|
| A | 08.04.15 | New Issue | KJ/DD | |
| B | 10.02.02 | Dwg Rev updated | KJ | |
| C | 11.02.18 | Dimensions updated per Dwg Rev C | KJ <i>[Signature]</i> | <i>[Signature]</i> |



**D3622-1 BALL STUD
SHOWN**



**D3622-11 BALL STUD
SHOWN**

| PART NUMBER | DIM | | DIM C | WEIGHT (LBS) | THREAD D | Ø E | |
|----------------|-------|-------|----------|-----------------|-----------------|--------|--------|
| | A | B | | | | MIN | MAX |
| D3622-1 | 0.125 | 0.563 | 1.19 | 0.03 | 0.3125-24UNF-3A | 0.3053 | 0.3125 |
| D3622-3 | 0.125 | 0.563 | 1.19 | 0.03 | 0.1875-32UNF-3A | 0.1840 | 0.1900 |
| D3622-5 | 0.090 | 0.900 | 1.53 | 0.04 | 0.3125-24UNF-3A | 0.3053 | 0.3125 |
| D3622-7 | 0.060 | 0.330 | 0.96 | 0.03 | 0.3125-24UNF-3A | 0.3053 | 0.3125 |
| D3622-9 | 0.090 | 1.160 | 1.79 | 0.04 | 0.3125-24UNF-3A | 0.3053 | 0.3125 |
| D3622-11 | 0.060 | N/A | 0.69 | 0.02 | NOT THREADED | 0.270 | 0.300 |
| D3622-13 | 0.090 | 0.680 | 1.31 | 0.03 | 0.3125-24UNF-3A | 0.3053 | 0.3125 |

D3622-X BALL STUD

NOTES:

- 1) MATERIAL: AISI 303 HEX BAR
REF DART SPEC M303H0.500
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENT P/N D3622-X & B/N PER QSI 044
- 7) WEIGHT: SEE D3622-X TABLE

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO 83648 465
12/07/24

| | | | |
|------------|---|---|--------------|
| C | SHEET 1: ADD -5, -7, -9, -11 & -13. ADD D3622-X TABLE. SHEET 2 DELETED | JPH | 10.07.20 |
| B | ADD -3 (SHEET 2) | HS | 09.09.18 |
| A | NEW ISSUE | MB | 07.04.13 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | JPH | DART AEROSPACE LTD HAYKESBURY, ONTARIO, CANADA | |
| DRAWN | JPH | | |
| CHECKED | | DRAWING NO. | REV. C |
| MFG. APPR. | | D3622 | SHEET 1 OF 1 |
| APPROVED | | TITLE | SCALE |
| DE APPR. | | BALL STUD | NTS |
| DATE | 10.07.20 | COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD | |

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